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# *Indian Standard*

# GLOSSARY OF TERMS RELATING TO PAPER AND FLEXIBLE PACKAGING

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Gr 7 *August* 1974

# *Indian Standard*
# GLOSSARY OF TERMS RELATING TO PAPER AND FLEXIBLE PACKAGING

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# *Indian Standard*
# GLOSSARY OF TERMS RELATING TO PAPER AND FLEXIBLE PACKAGING

## 0. FOREWORD

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 7 November 1973, after the draft finalized by the Paper and Flexible Packaging Sectional Committee had been approved by the Marine, Cargo Movement and Packaging Division Council.

**0.2** 'Indian Standard glossary of terms relating to paper and pulp-based packaging materials' (IS : 4261-1967), was published with a view to avoiding ambiguity in the definition of terms. That standard covers mostly paper and pulp-based packaging terms for materials and only a few of the terms relating to containers as such. Since the publication of this glossary, indigenous packaging technology has made striking advances. With a view to keeping pace with the advancement, it has been felt to prepare another glossary which covers mostly terms relating to packages and wraps. It is hoped that this standard will fulfil the requirements of the package making industry. In compiling this glossary, every effort has been made to avoid highly scientific definitions and give the meaning of each term in simplest form consistent with accuracy.

**0.3** In formulating this standard due weightage has been given for international co-ordination among the standards and practices prevailing in other countries.

**0.4** Should there be any difference between the definitions in this glossary and those in the individual standards, the latter shall prevail.

**0.5** This standard is intended to form a series of Indian Standards on glossary of packaging terms relating to the fields of plastics, glass, metal and wood. The other glossaries published are:

IS : 1394-1973 Glossary of terms relating to metal containers trade (*second revision*)
IS : 6654-1972 Glossary of glass packaging terms
IS : 6703-1972 Glossary of wooden packaging terms
IS : 7019-1973 Glossary of terms in plastics packaging

## 1. SCOPE

**1.1** This standard defines the terms relating to paper and flexible packaging and also covers printing terms. The terms relating to wrappings are also covered (*see* **3**).

## 2. TERMINOLOGY

**2.1 Adhesive** — A substance capable of holding materials together by surface attachment.

NOTE — Adhesive is the general term and includes, amongst others, cement, glue, mucilage and paste. All these terms are loosely used interchangeably. Various descriptive adjectives are applied to the term adhesive to indicate certain characteristics as follows:

a) Physical form, for example, liquid adhesive, tape adhesive.
b) Chemical type, for example, silicate adhesive, resin adhesive.
c) Materials bonded, for example, paper adhesive, metal plastic adhesive, can label adhesive.
d) Conditions of use, for example, hot setting adhesive.

**2.2 All-Fibre Drum** — Drum whose top and base as well as the sidewall are made from paper, board or a combination thereof.

**2.3 Bale** — A shaped unit, usually containing compressible articles or materials, enclosed in a fibre container or other wrapping, and bound by strapping, rope or wire under tension.

**2.4 Baler Bag** — A paper sack to contain one or more loose-boxes or wrapped units of a commodity when protection against crushing is not required.

**2.5 Band** — A relatively narrow strip of paper, cloth, film, metal or other material encircling an object or package (*see* Fig. 1).

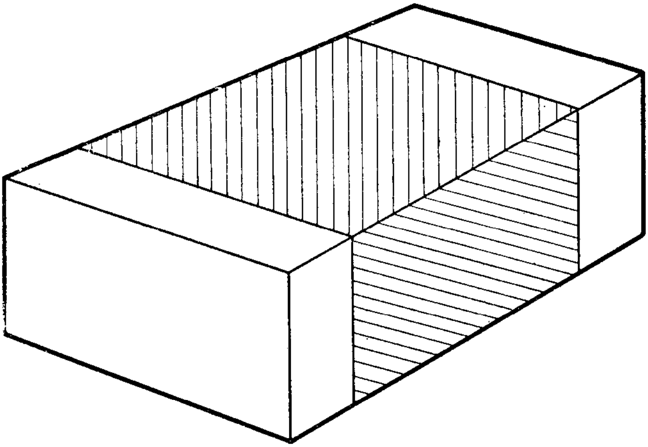


FIG. 1 BAND

**2.6 Band Box Two-Piece Carton** — A style of carton in which the band (forming a front and two sides) is stitched or glued to the rear panel of the body (forming the base, back and lid). It is sometimes referred to as a two-piece style carton.

**2.7 Banding** — The process of applying a band to a package or a palletised load or covering the ends and sides or parts of a set-up paper box with paper.

**2.8 Banker Envelope** — That style of envelope in which the opening and flap are formed on the side having the greater dimensions.

**2.9 Barrier** — A ply of some materials which resists the transmission of gas, vapour grease, etc, to or from the package.

**2.10 Base** — Part of the package on which it usually rests while filling and transporting.

**2.11 Beaded Box** — A cylindrical paper box on which the end is die-curled around the bottom card.

**2.12 Beading** — Covering the ends and sides of a box or a lid with paper glued all over.

**2.13 Bending** — An operation of folding over piece of material along the score or crease lines printed on the same.

**2.14 Block Bottom Bag** — A paper bag made with a lengthwise lap joint creased each side to fold flat, with the bottom made by first folding into a flat diamond shape, with a centre overlap, then folding over the points to meet in the centre. The bag opens out into a square cross section.

**2.15 Blocking** — An undesired adhesion between touching layers of a material, such as might occur under moderate pressure or temperature or both during storage and use.

**2.16 Bottoming or Topping** — Covering or labelling the base or top of a box with paper or other material glued all over.

**2.16.1** Bottoming also refers to the phenomenon of a resilient cushioning material getting completely compressed under a load and thus having no more cushioning property left.

**2.17 Box Maker** — A corrugated or solid fibreboard box manufacturing establishment which at least has equipment to score, slot, print and join corrugated or solid fibreboard sheets into boxes and is regularly utilized in the production of fibre boxes in commercial quantities.

**2.18 Built-Up** — Multiple layers of corrugated pads glued together to give a desired thickness, normally used for interior packing.

**2:19 Bunched and Tied Sack Closure** — A sack closure made by bunching the top of the sack and securing with string, rope or wire.

**2.20 Bundle** — A shipping unit of two or more articles wrapped and fastened together by suitable means.

**2.21 Cake Carton** — A one-piece carton which is set up by interlocking the side members into the body part and having a lid with side flaps and a tuck in flap in front.

**2.22 Capping** — Covering the top of the lid or bottom of a box and turning the paper partially on to the sides and ends.

**2.23 Carton** — A container for merchandizing consumer quantities of products and is made from paperboard usually of thickness between 0·30 mm and 1·10 mm.

**2.24 Carton Blanks** — Individual cartons in the flat form after cutting and creasing and the strippings have been removed before being folded over for glueing, stitching or making up. Such blanks are sometimes used for feeding into high speed packing machines which form, glue and fill them automatically.

**2.25 Case, Lid Case** — A fibreboard case with a lid which wholly encases the sides and ends of the body.

**2.26 Cell** — A fitting made from fibreboard usually with open ends and serving to block, brace or cushion an item within a container.

**2.27 Certificate, Box Maker's** — A statement printed on a corrugated or solid fibreboard box testifying that all applicable construction requirements have been observed and identifying and locating the box maker (*see* **2.17**).

**2.28 Chain Stitch** — A type of stitch employed in sewn closures; formed with a single thread, the loops of which are passed through the sack material and through the loop of the previously formed stitch.

**2.29 Clenched or Normal Seam** — Rolled, mechanically-formed joint, comprising one thickness of the body and three thicknesses of the end, not truly interlocking.

**2.30 Closure Band** — A metal or plastic band by which a metal, plastic or wooden lid is fixed to the body of the fibreboard drum.

**2.31 Closure Lugs** — Strips of metal fitted at equal intervals near the top edge of the sidewall which are turned over to hold the lid in position.

**2.32 Combined Board** — The term used to indicate a completely fabricated sheet assembled from several components, such as corrugated fibreboard or solid fibreboard.

**2.33 Containerboard** — The paperboard components (linerboard, corrugating material, filler chip) from which corrugated and solid fibreboard are manufactured.

**2.34 Convolute Winding** — Style of straight winding of circular or noncircular tubes. Material is fed from reel with each layer superimposed on preceding layer.

**2.35 Corner Staying** — Joining up the corners with paper or cloth.

**2.36 Corrugating Material or Corrugating Medium** — Paperboard used in forming the fluted portion of the corrugated board.

**2.37 Corrugator** — A machine which usually takes containerboard from three rolls and combines it into a corrugated board consisting of two exterior facings and an intermediate fluted member. The corrugator forms the intermediate material into a series of arched trusses and attaches the facings to them with adhesive applied at the tips of the flutes. The resulting board is called single wall corrugated fibreboard. By taking containerboard from five rolls, it also produces a corrugated board, commonly known as double wall, consisting of three facings and two corrugated mediums. By adding another corrugated medium and facing triple wall corrugated fibreboard is produced. The machine also may score the fibreboard in one direction and cut it to size.

**2.38 Crash Bottom** — Preglued bottom of a folding box which erects itself while opening the carton.

**2.39 Crease** — An impression in the board to give the line of fold.

**2.40 Crimped Bottom Cylindrical Box** — A box having an indentation at the bottom for the purpose of keeping the bottom card in position.

**2.41 Cross-Pasting** — Small areas of adhesive applied between the wall plies of a multiwall paper sack to facilitate opening and closure.

**2.42 Cylindrical Box** — A rigid tube made from either spiral or convolute tubing. The lid constructed similarly or from another material, such as plastic or metal.

**2.43 Designation** — Fibre drums are designated by their dimensions followed by their construction. It is assumed that internal dimensions are quoted unless otherwise stated.

*Example:*

508 × 810 mm All-fibre Recessed Ended.

**2.44 Dispensing Carton** — An upright carton with a portion of its front cut away at the base so that the bottom unit of the contents may be extracted.

**2.45 Display Carton Outer** — A carton used for displaying its contents.

**2.46 Double-Locked Stitch** — A type of stitch employed in sewn end closures, formed with two threads known as the locking or looper thread and the needle thread.

**2.46.1** A loop of the needle thread is passed through the sack material and through a loop of the locking thread extending from the previously formed stitch. To obtain the double lock, a loop of the locking thread is passed through a loop of the needle thread.

**2.47 Double Seam** — Rolled, mechanically-formed interlocking joint, comprising two thicknesses of the body and three thicknesses of the end.

**2.48 Duplex Bag** — A paper bag consisting of two plies, not necessarily of the same materials.

**2.49 Edging, Mounting or Tipping** — Edging a piece of paperboard by paper or other materials.

**2.50 End Closure** — The closure effected by the manufacturer to one or both ends of a paper sack.

**2.51 Ending On, Siding On** — Joining on a piece of board to a box blank with paper or cloth to form an end or side.

**2.52 External Coating** — A liquid or semiliquid material applied by spray or brush, or other means, to the outside surface of the drum to meet some special requirement or for decorative purposes.

**2.53 External Valve Sack Closure** — A sack closure made by tucking in, or rolling up and tucking in, the external valve.

**2.54 Fashion Carrier Bag** — A strong paper bag usually flat or satchel style with a large flap closure at the top. The closure is reinforced with board to take a carrying handle of a punched board handhole—twine or plastic device.

**2.55 Fall Front Box (Full or Part)** — A box having a portion or whole of the front hinged to enable it to fall and thus display the contents.

**2.56 Fibreboard Drum** — A shipping package with cylindrical sidewall composed of paper or board having disc ends of similar or different materials, such as steel, wood, etc.

**2.57 Fibreboard Drum Dimensions** — Unless otherwise stated, dimensions are expressed in millimetres and are given in the order — diameter, height.

**2.57.1** *Internal Dimensions* — Measured on the inside walls of the drum.

**2.57.2** *Internal Height* — The perpendicular distance between the inner faces of the two ends.

**2.57.3** *Diameter* — The maximum distance between two points on the side walls of the drum, taken on a line parallel to the base.

**2.57.4** *External Dimensions* — Measured on the outside walls of the drum.

**2.57.5** *External Height* — The greatest distance, measured parallel to the length, between the two extremities.

**2.58 Facings** — A form of linerboard used as the flat members of corrugated fibreboard. Sometimes erroneously called liners.

**2.59 Fibre or Fibreboard Box** — A container made of either corrugated or solid fibreboard.

**2.60 Fibre/Steel Drums** — Fibreboard drums whose base or top, or both, are made from steel with a paper or board sidewall.

**2.61 Fibre/Wood Drums** — Fibreboard drums whose base or top, or both, are made from wood (natural or laminated plywood) with a paper or board sidewall.

**2.62 Film Front Bags** — Generally flat style bags where the back of the bag is paper and the front is transparent film for product visibility.

**2.63 Filter Cord** — Single or double cord, usually made from jute, paper, or cotton, which can be incorporated in paper sack sewn end closures to cushion the stitches and/or to seal the stitch holes.

**2.64 Flange** — A board cut slightly larger than and glued to the bottom of the box or top of lid to form a protruding edge.

**2.65 Flaps** — The closing members of a fibreboard box.

**2.66 Flat Bag** — A paper bag of simple construction without gussets made from a preformed flat tube, the bottom being closed, turning up this tube and pasting the turn-up to the outside of the bag so formed.

**2.67 Flies (Paper or Lace)** — Paper or lace fixed inside the top edge of the box to cover the contents in position.

**2.68 Flush Sided** — A drum in which the lid flange and the sidewall form a smooth plane. The body of the drum has spigot or inner sleeve protruding above the top edge of the sidewall to which the lid fits.

**2.69 Flute (or Corrugation) Direction** — The normal direction of the flutes is parallel to the depth of the box. In 'end-opening' boxes and in wrap-around blanks the flute direction may be parallel to the length and width. With the latter construction, the designation is 'horizontal corrugation box' or 'horizontal corrugation blank'.

**2.70 Gang Label** — Multiple label applied convolutely to a length of tube which is subsequently cut into unit container lengths.

**2.71 Grocery Carrier Bag** — A strong paper bag usually self-opening satchel or half block bottom style with reinforcement at the mount and fitted with a carrying handle of twine, paper, board or plastic.

**2.72 Glue-End Carton, Plain End Carton** — A carton which has its seam either glued or stitched and which has at each end four square-cut or tapered flaps, which are glued to effect the closure; also known as a plain-end carton.

**2.73 Glued (Firmly)** — Firm gluing is indicated when mutilation of the surface fibres accompanies separation of joined areas.

**2.74 Gusset** — Three folds, to make a pleat each side of a bag or sack, which allows the bag or sack to take up a rectangular cross section when filled.

**2.75 Gusset Envelope** — That style of envelope, in either pocket or banker shape, which incorporates pleats to allow for expansion.

**2.76 Half-Block Bottom Bag** — A modified form of the block bottom paper bag in which the points on the base are folded to overlap. The open bag has a rectangular cross section.

**2.77 Heat-Sealed Valve Sack Closure** — A sack closure made by heatsealing an external valve made from paper laminated or coated with thermoplastic material.

**2.78 Hinged Lid** — A round or rectangular lid, an edge or part of which is attached to the container by some flexible material to enable it to be repeatedly opened and shut.

**2.79 Infold** — Refers to a box so folded that all walls are folded in over the body of the blank.

**2.80 Inner Packing** — Materials or parts used in supporting, positioning, or cushioning an item in an outer shipping container.

**2.81 Internal Coating** — A liquid or semiliquid material applied by spray or brush, or other means, to the inside surface of the fibre drum to meet some special requirements.

**2.82 Internal Valve Sack Closure** — A sack closure made by the action of the sack contents pressing against the walls of an internal valve.

**2.83 Joint** — The joint is that part of the box where the ends of the scored and slotted blank are joined together by taping, stitching, or gluing. When accomplished in the box manufacturer's plant, it is known as a manufacturer's joint; when effected at the time that the box flaps are sealed in a box user's plant (usually on automatic equipment), it is called a user's joint.

**2.84 Knocked Down** — A term denoting that an article is partially or entirely taken apart; not setup.

**2.85 Kraft** — A word meaning strength; applied to pulp, paper or paperboard produced from wood fibres by the sulphate process.

**2.86 Kraft, Cylinder** — Containerboard made from kraft pulp on a cylinder machine, of multi-ply formation with prominent grain direction of fibres.

The sheet is formed on a moving felt from a series of cylinders rotating in vats of paper fibres.

**2.87 Kraft, Fourdrinier** — Containerboard made from kraft pulp on a fourdrinier machine, basically of single-ply formation, although possibly with supplementary second ply, with less prominent grain direction. The sheet is formed on a travelling endless wire screen which may also be vibrated to obtain more random orientation of fibres.

**2.88 Layer Card Flat** — Flat pieces of board used to separate layers.

**2.89 Lever Lid and Ring** — Ring component is secured to the container body and has an orifice into which the (inverted) hat shaped lid is pressed.

**2.90 Lid** — The removable part at the top of the drum or box.

**2.91 Liner** — A separate loose bag sheet or container of any waterproof barrier material used inside the package to give specific required properties.

**2.92 Linerboard Wet Strength** — A facing which has been chemically treated to impart higher resistance to rupture or disintegration when saturated with water.

**2.93 Lining** — An inner ply of some material, other than that which is used for the general construction.

**2.94 Lock-End Carton** — A carton which has its seam either glued or stitched and at its open end has one flap provided with tongues which, on closing the carton, engage in slits in its opposite flaps. It is sometimes referred to as a tongue and slit-carton.

**2.95 Longitudinal Seam** — The seam formed when the overlapping longitudinal edges of each ply are joined by adhesive.

**2.96 Loose** — Articles not in a box, package or other container.

**2.97 Loose Lid** — A lid which is in no way attached to the body of the box.

**2.98 Loose-Wrapped** — A lid having its covering glued only along the turn-in.

**2.99 Manufacturers' Joint** — That part of a case which is joined together by the manufacturer by taping, stitching or gluing.

**2.100 Master Pack**

**2.100.1** A shipping container used to overpack or unitize a number of individual containers.

**2.100.2** An outer fibreboard box to enclose and unitize two or more boxes of uniform dimensions and complying with other requirements.

**2.101 Medium, Wet Strength** — A medium which has been chemically treated to impart higher resistance to rupture or disintegration when saturated with water.

**2.102 Multiwall Paper Sack** — A sack having two or more plies, successively nested.

**2.103 One-Piece Case** — A fibreboard case, with one manufacturers' joint, constructed as a complete 'sleeve', the top and bottom each being formed by four flaps. The inner flaps may meet or have a gap between them, the outer flaps may meet or overlap either partially or completely.

**2.104 One-Piece Hinged Cover Box** — A complete container made from a single piece of board, the hinged cover that swings down completely enclosing the contents. Cover may be folded to form a display. It can be used for packaging biscuits, pastries, gems, confectionery, etc.

**2.105 Open-Mouth Paper Sack** — A paper sack closed by the manufacturer at one end only.

**2.106 Outfold** — Outwardly collapsible boxes have two side walls outside the body of the box when it is collapsed.

**2.107 Pad** — A sheet of board used in corrugated and solid fibreboard cases at the top or bottom or as a divider between layers, or a separator between articles.

**2.108 Panel** — A 'face' or 'side' of a box.

**2.109 Paper Bag/Paper Sack** — A preformed flat or gussetted flexible container longitudinally seamed and closed at one or both ends, made from one or more plies of paper or from paper in combination with other flexible materials, for example, plastics film or foil or from paper laminated, coated or impregnated with some other material. The term bag usually refers to such a container in the smaller range of sizes, whereas the term sack usually refers to a container in the larger range of sizes.

Note — There is no sharp dividing line in the middle range of sizes. Bags are invariably supplied closed at one end by the manufacturer, the closure of the other end being effected by the user, whereas sacks may be supplied closed at one or both ends (*see* **2.180**).

**2.110 Paper Bag Closure** — The closure effected to retain the contents of a paper bag by, for example, folding, tucking or twisting the surplus length of unfilled bag, gummed or adhesive tape, adhesives, ties or stapling wire, heat-sealing, stitching, and crimping.

**2.111 Paperboard Composite Container** — Container with side walls (body) of fibrous based material, for example, paperboard, and having end components of metal, plastic or board, or combinations of these.

**2.112 Partitions, Divisions** — Slotted strips fitted into each other so as to form a nest of compartments.

**2.113 Paster or Combiner** — Machine which applies an adhesive to two or more plies of paperboard and combines them into a single sheet of solid fibreboard.

**2.114 Pasting** — The application of adhesive to bond two surfaces.

**2.115 Pasted and Capped End Closure** — A paper sack pasted end closure reinforced by a capping strip, usually of paper, positioned over the end folds and secured with adhesive.

**2.116 Pasted and Stapled End Closure** — A paper sack pasted end closure reinforced with clenched metal staples.

**2.117 Pasted End Closure** — Paper bag or paper sack end closure made by folding the end to form a flat base and securing with adhesive.

**2.118 Platform** — A tray, punched or otherwise. fitted in box or lid to hold contents in position.

A carton fitment which is used where the contents require to be supported or to be held in position by shaped holes cut in the platform.

**2.119 Plug Lid** — A lid which pushes into mouth of container body.

**2.120 Pocket Envelope** — That style of envelope in which the opening and flap are normally formed on the side having the lesser dimensions, with seam or seams parallel to the longer side.

**2.121 Powderproof Bags (Siftproof Bags)** — A paper bag made by special cutting and folding of the two side seams of the bag, designed to prevent egress of powder and granular substances.

**2.122 Press-Out Box, Drawn Box** — A box completely formed from one piece by means of a heated die.

**2.123 Pull-Through Case, Lambert** — A fibreboard case consisting of one or two creased sheets placed within an outer 'sleeve' to which it is (they are) stitched or taped. The outer 'sleeve' forms the body; the creased sheet(s) form(s) the bottom and lid and, at the same time, strengthen(s) the sides.

NOTE — These are generally known as 'two-piece' or 'three-piece' pull-through cases or lamberts.

**2.124 Puncture Resistance** — The strength of material expressed in kg. cm or in oz per inch of tear as measured by the Beach puncture tester.

**2.125 Punnet** — A small paperboard collapsible, rigid, glued or wire stitched open-topped one-piece carton, usually square or rectangular, and with the top dimensions larger than the base to facilitate nesting after making up.

**2.126 Recessed Ended Drum** — A drum in which the flat part of the top and/or base is recessed inside the drum.

**2.127 Reinforcing Tape** — Tape, usually crepe kraft paper, used to reinforce paper sack sewn end closures.

**2.128 Rigid Box** — A box set up ready for use without further fixing when received from the box manufacturer.

**2.129 Rigid Paper Container** — A paper container that is supplied open, rigid and nested having a reinforced base and made mainly from greaseproof and vegetable parchment papers for the packing of such commodities as edible fats.

**2.130 Rose Bottom Bag** — A block bottom paper bag with a small tongue uniting the abutting points of the folded bottom. The open bag has a rectangular cross section.

**2.131 Sack Closure** — The closure effected by the user to retain the contents of a paper sack.

**2.132 Sack Sewing Thread** — Thread used to make sewn end closures, made from natural or synthetic fibres or filaments, or combinations of both.

**2.133 Satchel Bag** — A gussetted paper tube with the bottom closed by turning up the tube and pasting the turn-up to the outside of the bag so formed. When filled this bag forms a reasonably flat bottomed container.

**2.134 Score** — A light cut through or an impression on the surface of the board to give the line of fold.

**2.135 Sealing Tape** — An adhesive tape, usually cloth, paper, film, etc, used for sealing packages and containers.

**2.136 Semi-perforated Top** — A top having multiple local weakening or shearing of the material to facilitate puncturing by user. No material removed initially.

**2.137 Sewn and Taped End Closure** — A paper sack end closure made by sewing with thread and complete by applying tape, affixed by adhesive, over the stitch line.

**2.138 Sewn End Closure** — A paper sack end closure made by sewing with thread.

**2.139 Sewn and Taped Sack Closure** — A sack closure identical to a sewn and taped end closure (*see* **2.137**).

**2.140 Sewn Sack Closure** — A sack closure identical to a sewn end closure (*see* **2.138**).

**2.141 Shell and Slide** — An open-ended shell with a glued seam into which fits a slide or tray having end-flaps which fold over. The most common example is a cigarette carton.

**2.142 Shouldered Box** — A box having a shoulder formed by the insertion of a rim, or an inner box, the lid fitting over the projecting portion.

**2.143 Sides (Sidewall)** — Curved wall of the drum (which may be convolutely or spirally wound).

**2.143.1** Vertical lengthwise walls of a carton or box.

**2.144 Six Corner Glued Box** — Similar to one piece hinged cover but cover corners are glued. Used where crushing strength is needed from top to bottom.

**2.145 Skillet** — A plain, glue-end carton that is intended to be overwrapped.

**2.146 Sleeve** — An open-ended sleeve of paperboard similar to the shell of a cigarette shell and slide which is used as an outer stiffener. Sometimes it is overwrapped in transparent film, where it is used in the place of an outer, leaving the unit cartons visible.

**2.146.1** A separate inner tubular ply of any material having open ends.

**2.147 Slot** — A cut made in a fibreboard sheet usually to form flaps and thus permit folding, having any length and a normal width of 6 mm.

**2.148 Sleeve Double** — Two or more separate tubes (usually circular) assembled to form one complete sleeved unit. Provides operative (for example, puffer or inflator) or protective function.

**2.149 Slip Lid** — A lid which fits over mouth of container body.

**2.150 Speciality Bag** — A paper bag made to a special requirement.

**2.151 Spiral Label** — Label applied from reel during spiral winding operation. May be printed with random or registered design.

**2.152 Spiral Winding** — Style of continuous winding of circular tubes. Material is fed from two or more reels with each layer covering spiral but joint by preceding layer.

**2.153 Spot-Glued Carton** — A box made from a carton blank with corner tabs capable of being spot-glued and folded over on special carton gluing machines in such a way as to adhere to the adjacent side (or end) panels which are diagonally creased and folded over by the machine to make this possible.

**2.154 Staples** — Short lengths of malleable wire which can be clenched through the sack materials to reinforce pasted end closure or to stitch mouth of bags.

**2.155 Stepped and Pasted End Closure** — A paper sack pasted end closure in which some or all of the plies in a multiwall paper sack are arranged in echelon and are pasted individually.

**2.156 Stitching or Stapling** — Application of metal fasteners to form the joint of fibre boxes or to close boxes, stitches are machine-formed using wire drawn from a spool. Staples are preformed.

**2.157 String Opening** — Generally found in convolutely wound containers only. Opening device is a thread of string inserted automatically during winding operation around periphery of container body.

**2.158 Tape** — A narrow strip of cloth or paper, sometimes having a filler or reinforcement, coated on one side with an adhesive. It is used to form the joint on a fibre box or to close or reinforce such a box.

**2.159 Taped and Sewn End Closure** — A paper sack end closure made by applying tape to the end to be closed and sewing through both the tape and the end of the sack with thread.

**2.160 Taped and Sewn Sack Closure** — A sack closure identical to a taped and sewn end closure (*see* **2.159**).

**2.161 Taping** — Fixing pieces of tape or ribbon from the box to the lid to form a support for the lid, or fixing pieces of tape inside the box to secure the contents or facilitate their extraction.

**2.162 Test, Compression** — Involves the application of pressure applied by two flat surfaces of a machine to opposite faces of a box, such as top and bottom, the two ends or the two sides, the test is performed on individual empty boxes and measurement is taken of the load applied in kg and the deflection or deformation in millimetres. The test is related to the forces which filled boxes encounter while being transported by rail or truck and while stacked in warehouses.

**2.163 Test, Corrugated Linerboard (CLT)** — The amount of force required to crush a narrow specimen of linerboard held upright in a special clamp. This test measures the on-edge stiffness of the material.

**2.164 Test, Corrugating Medium (CMT)** — Measures the amount of force required to crush a specimen of corrugating medium that has been fluted in a miniature corrugator and formed into single face by application of strip of pressure sensitive tape. This test relates the strength of a corrugating material to the flat crush strength of single wall corrugated fibreboard made from that medium.

**2.165 Test, Drop** — The resistance of a filled container to shocks caused by dropping in certain ways (that is on corners, edges, faces, etc) onto a solid surface is observed. The test measures how well a container and its inner packing (if any) will protect the contents against the handling encountered in shipping.

**2.166 Test, Edgewise Compression (Short Column)** — The edgewise compressive strength of a short column of combined corrugated fibreboard is measured. This compressive strength, in combination with the flexural stiffness of the combined board, relates to the top-to-bottom compressive strength of corrugated fibreboard shipping containers.

**2.167 Test, Elmendorf Tear** — The amount of energy required to continue a tear of specified length of tape, or other material, once the tear has been started by an intentional pre-cut, is measured.

**2.168 Test, Flat Crush** — Records the force required to crush the corrugations in a specimen of combined board. Pressure is applied to the flat surfaces of the specimen and the load per square centimetre required to cause the corrugations to collapse is determined.

**2.169 Test, Incline Impact (Conbur)** — Determines the resistance of a packaged item to damage from impact. In the test, the container, complete with contents is positioned on the front end of a dolly which is released from a predetermined point on an inclined set of tracks to strike against a solid wall at the bottom. The impact force can be measured with a suitable shock recorder.

**2.170 Test, Revolving Drum** — Determines the resistance of a packaged item to shocks encountered by rotating inside a drum which is usually 2·1 metres in diameter and which has 6 flat faces. Baffles mounted in a standard design on the faces force the box to fall on different sides, edges and corners as the drum is rotated. The test is often continued to the point where the contents spill from the container.

**2.171 Test, Ring Stiffness** — The amount of force required to crush a narrow specimen of containers board inserted into a circular groove in a holder is established. This test measures the on-edge stiffness of the material and is applicable to linerboard and corrugating medium.

**2.172 Test, Vibration** — The container with contents is shaken or vibrated in a manner similar to some of the movements during transportation. The apparatus consists of a table which provides an up-and-down motion. This test is usually a preliminary test in conjunction with other handling and transportation tests.

**2.173 Test, Water Absorption** — The procedure measures, as a percentage increase in weight, the amount of water absorbed by 100 mm × 100 mm specimens of fibreboard during a one-hour period of immersion. The test applies only to boxes made of fibreboard treated with wax or chemicals (*see* **2.185**) to impart water and moisture resistance.

**2.174 Test, Water Wicking** — A measure of the resistance to water of corrugated fibreboard which has had the corrugating medium (and, optionally, the facings as well) infused with a wax or wax blend. A specimen of predetermined size is processed by cutting through the corrugations at their approximate centre for a specified distance along one of the edges. After the resultant sections are folded back to form a T-shaped column, the specimen is allowed to stand in 25 mm depth of water for 24 hours with the corrugations in a vertical direction. Wicking, as evidenced by discolouration above the surface of the water, is recorded for each facing and the corrugating medium.

**2.175 Three-Piece Case** — A fibreboard case consisting of a body 'sleeve' or 'envelope' sometimes having flanges at the openings, a lid and a bottom which are usually identical components in the shape of trays. The sides of the lid and bottom together may cover the whole or part of the body.

**2.176 Tied Sack Closure** — A sack closure made by rolling the top of the sack over a suitable length of the string, the ends of which are then tied to form lugs or a looped handle.

**2.177 Tray** — A rectangular tray with sides and ends suitable for overwrapping with transparent film, used for biscuits, pastries, fruits, etc, where the contents are required to be visible.

**2.178 Tube** — A sheet of fibreboard, scored and folded to produce a four-sided form. Normally used in the interior of a box to add protection and compression strength. The joint of a tube is sometimes sealed by taping, stitching or gluing.

**2.179 Tuck-End Carton, Drug Tuck Carton** — A carton which has its seam either glued or stitched, the closure being effected by two side flaps and one main flap with a continuous extension that is inserted or tucked into the inside of the body. This main flap may either be a continuation of the same main panel at the top and bottom of the carton or of opposing front and rear panel, one at the top and other at the bottom of the carton.

**2.180 Valved Paper Sack** — A paper sack with both ends closed by the manufacturer, but provided with a valve in one or two corners through which the sack is filled. Several different types of valves are available, some internally constructed and some externally constructed.

**2.181 Water Resistant** — A board, treated with water repellent materials (sized), so as to have a degree of resistance to damage or deterioration by water in liquid form.

**2.182 Wax Blend Surface Coated** — Combined board made from unimpregnated components and coated on one or both sides, as desired, with a hot melt wax blend.

**2.183 Wax Dipped** — Combined board impregnated by dipping into a hot paraffin wax blend such that the resultant wax content of board is not less than 40 percent of the weight of the board prior to dipping.

**2.184 Wax Dipped Sewn End Closure** — A paper sack sewn end closure immersed in molten wax to increase the moisture resistance of the closure.

**2.185 Wax Impregnated** — Combined board having one or more components infused with a paraffin type wax or wax blend to a minimum of 2·5 kg per 100 $m^2$ per impregnated component (2 kg per 100 $m^2$ for conventional weight corrugating materials lighter than 16·5 kg per 100 $m^2$).

**2.186 Wax Impregnated Plus Wax Blend Surface Coated** — Combined board having one or more components infused with a paraffin type wax or wax blend to a minimum of 2·5 kg per 100 $m^2$ per impregnated component (2 kg per 100 $m^2$ for conventional weight corrugating materials lighter than 16·5 kg per 100 $m^2$) and in addition, coated on one or both sides, as desired, with a hot melt wax blend.

**2.187 Weight of Facings, Minimum Combined, of Corrugated Board** — This is the sum of weights per 100 $m^2$ of all facings in the board structure excluding the weight of coatings and impregnants and excluding the weight of the corrugating medium and the corrugating adhesive.

**2.188 Window Bags** — Mainly satchel and self-opening satchel bags having a window where product visibility is desired.

**2.189 Window Carton** — A carton of any style which has an aperture or apertures cut in one or more main panels provided with a patch of transparent film to form a window to allow the contents to be viewed.

**2.190 Wood End Case** — Similar to a wood frame and fibreboard case, but the ends are made entirely of wood.

**2.191 Wood Frame End Case** — A fibreboard case in which the body section consists of a single sheet forming the sides, bottom and lid, with an overlap at the joint, the two ends consist of a fibreboard panel nailed or stitched to a wooden frame. The sides and the bottom are nailed to the wooden frame of the ends.

## 3. TERMS RELATING TO METHODS OF WRAPPING

**3.1 Base Folding** — Any method of fold wrapping in which the wrapper is draped over the article or articles wrapped, and the principal folds are made on the bases.

**3.2 Bead Seam** — A seam in which the two edges of the wrapper are welded together along a very narrow strip, without overlap (*see* Fig. 2).

**3.3 Bunch Folding** — Base folding in which the lower portion of the wrapper is bunched underneath the package, without forming regular-shaped folds. The bunching may be effected by tucking from two opposite directions only (two-way bunch folding) or by tucking from four directions spaced 90° apart (four-way bunch folding) (*see* Fig. 3).

**3.4 Bundling** — Wrapping several finished boxes for shipment or storage, in the setup paper box industry.

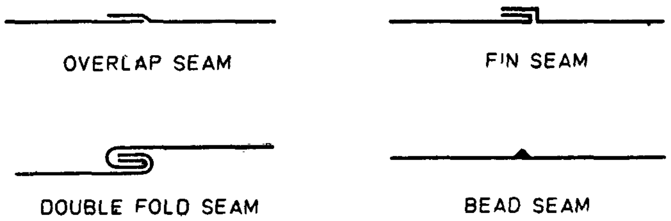


FIG. 2 SECTION OF SEAM

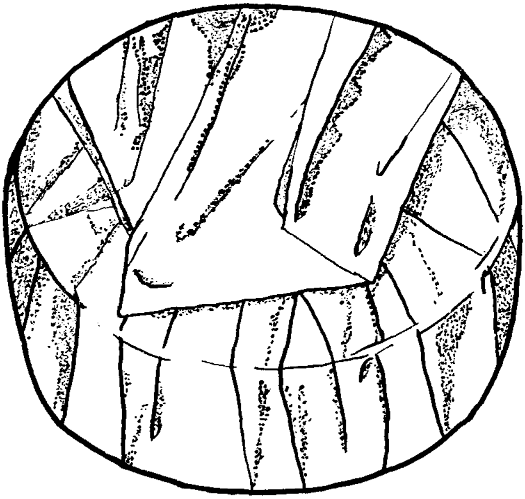


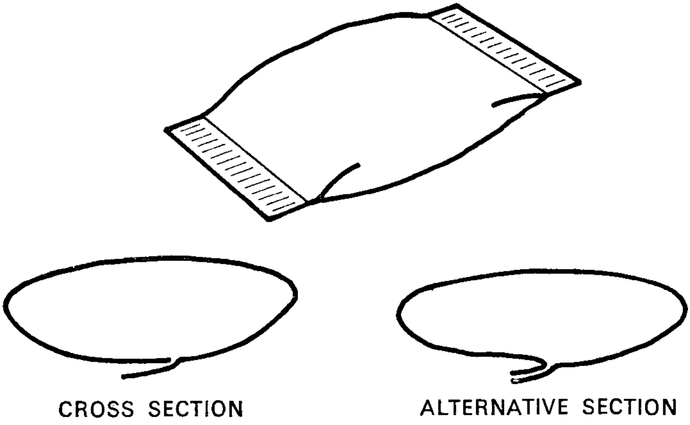
FIG. 3 BUNCH FOLD

**3.5 Bundling Parcelling** — Overwrapping as applied to parallelopiped assemblage of articles, especially cartons.

**3.6 Cestello Wrapping, Basket Wrapping** — A variation of sachet wrapping in which the fantail twist is positioned on the side of the article, rather than at the end.

**3.7 Crimp Wrap, End Crimp Wrapping** — A method of wrapping in which the wrapper is formed into a tube around the article or articles wrapped, and the ends of the wrapper are closed by crimping. In many cases a package produced by crimp wrapping may be gussetted (*see* Fig. 4).

**3.8 Crimping** — The action of clamping together layers of the same or different wrappers between dies of serrated section, which are usually, but



CROSS SECTION ALTERNATIVE SECTION

Fig. 4 End Crimp Wrap

not necessarily, heated. The dies tend to impart a characteristic ridge-and-furrow appearance to the finished result.

**3.9 Cigarette Folding** — A method of fold wrapping, characteristic of cigarette packet wrapping, in which double point folding is carried out on three edges of the package; on one end of the package, normal double point folding is used and on the adjacent sides modified double point folding is used. There is no seam in the normal sense (*see* Fig. 5).

Note — This type of fold wrapping is also commonly employed with the normal double point folding transferred to a long side of the package, and the modified double point folding on the ends.

**3.10 Deadfold** — A hand or machine made fold which will remain in position without sealing such as on a soft foil.

**3.11 Double-Fold Seam, Grocer's Fold, Drugstore Fold** — A fin seam in which the double thickness of the wrapper is turned over upon itself (*see* Fig. 2).

**3.12 Double Point Folding** — A particular sequence of tucking and folding operations carried out on a wrapper previously bent into tube form, where two flaps (which may or may not be pointed) are produced. With respect to the initial tuck, the required sequence of directions from which the tucks and folds are made is: 0°, 180°, 90°, 270° (or 0°, 180°, 270°, 90°) (*see* Fig. 6).

**3.13 Double Point End Folding** — End folding using the double point folding sequence (*see* Fig. 7).

**3.14 End Folding** — Any method of fold wrapping in which the wrapper is formed into a tube around the article or articles wrapped, and the principal folds are made over the end.

**3.15 Envelope Base Folding** — Base folding using the double point folding sequence (*see* Fig. 8).

**3.16 Fantail Twisting** — The variation of twisting in which the part of the wrapper which is gripped in the twisting operation is spread out into a fan-shaped tail.

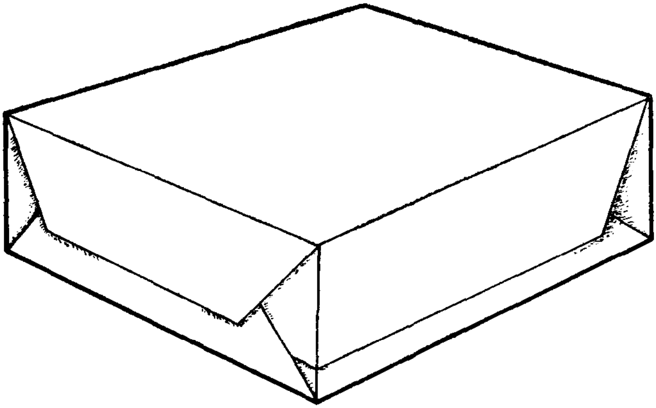


FIG. 5 CIGARETTE FOLD

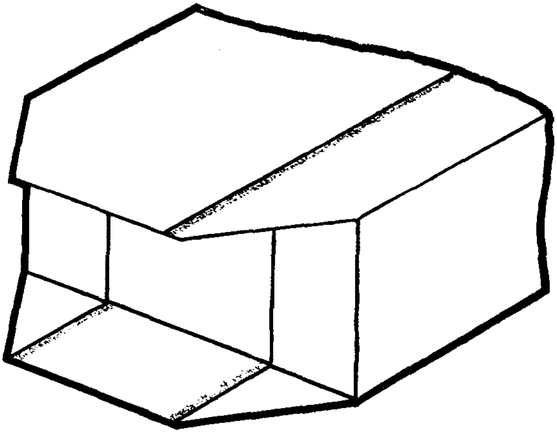


FIG. 6 DOUBLE POINT FOLD

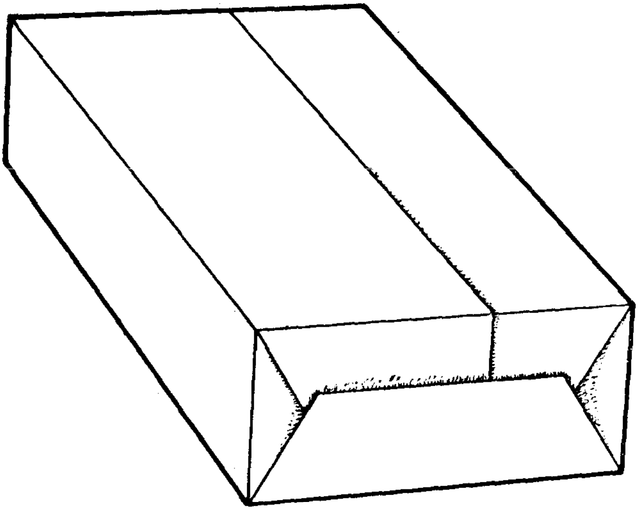


FIG. 7 DOUBLE POINT END FOLD

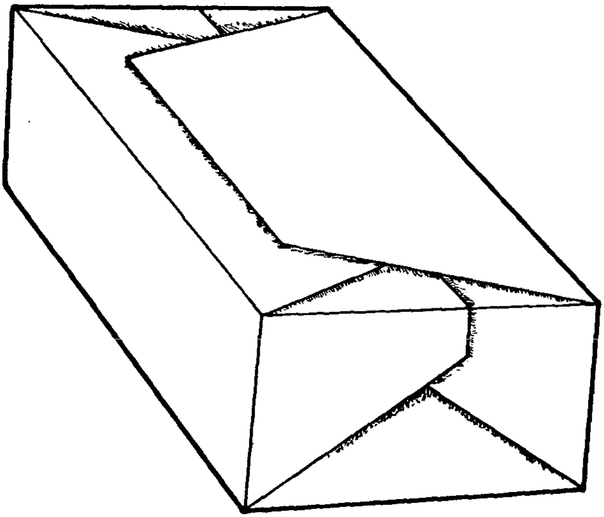


FIG. 8 ENVELOPE BASE FOLD

**3.17 Fin Seam** — A seam in which the inner surface of both edges of the wrapper are brought together (*see* Fig. 2).

**3.18 Fin-Seal Package** — A flat package commonly produced from two separate wrappers which are each secured to the other by crimping along all four edges. Fin-seal packages may also be formed from a single wrapper folded over and then crimped along three of four edges (*see* Fig. 9).

**3.19 Flap, Ear, Tab, Tail, Tongue** — A folded part of a wrapper, which at some stage in the wrapping process stands proud of the package.

**3.20 Fold Wrapping** — A method of wrapping in which the wrapper is caused to follow closely the surface of an article or group of articles by a series of bending, tucking and folding operations.

**3.21 Gusset** — A part of a wrap where the wrapper is tucked to take in surplus material in such a way that there are four thicknesses of the wrapper at the place. Normally associated with crimp wrapping (*see* Fig. 10).

**3.22 Multiple Wrapping** — A form of wrapping in which the wrap is made up of two or more separate wrappers, of the same, or (more usually) of different materials. The wrappers may be of the same, or of different materials. The wrappers may be of the same, or of different dimensions and may be applied simultaneously or at separate stages in the wrapping process.

**3.23 Overwrapping** — A form of wrapping process in which an overall wrapper is applied to a carton or other container, or to a prewrapped article or group of articles, as opposed to the direct wrapping of merchandize.

**3.24 Overlap Seam** — A seam in which the inner surface of one edge of the wrapper overlays the outer surface of the other edge of the wrapper (*see* Fig. 2).

**3.25 Partial Overwrapping** — A method of wrapping in which a partial overall wrapper is applied as a sleeve around the width of a carton or other container or of a prewrapped article or group of articles, leaving the ends exposed (*see* Fig. 11).

**3.26 Pleat** — A part of a wrap where the wrapper is tucked to take in surplus material in such a way that there are three thicknesses of the wrapper at the place (*see* Fig. 12).

**3.27 Progressive End Folding** — A particular sequence of tucking and folding operations carried out on a wrapper previously folded into the tube form, where adjoining flaps are formed and folded down one after the other at the ends of the tube (*see* Fig. 13 and 14).

**3.28 Portfolio Folding** — A variation of envelope base folding, most commonly used for the wrapping of chocolate bars (*see* Fig. 15).

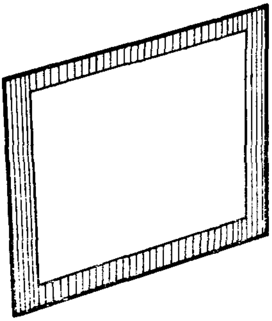


Fig. 9 Fin-Seal Wrap

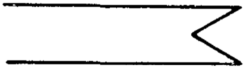


Fig. 10 Gusset

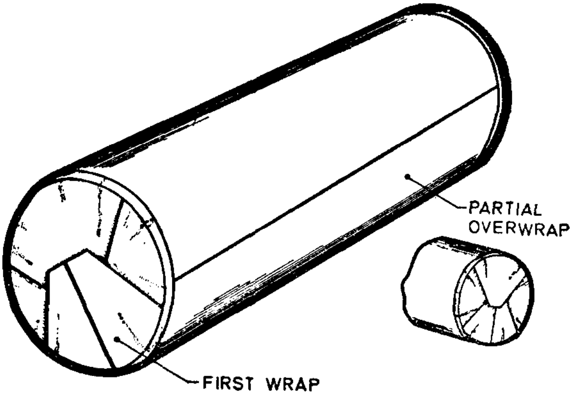


Fig. 11 Roll Wrap

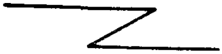


Fig. 12 Pleat

**3.29 Pillow-Type Package** — A package produced by crimp wrapping, in which the contents are introduced into the wrapper in the form of a continuous tube. The tube is then crimped and cut in between the articles being wrapped, thus forming individual packages.

**3.30 Rat-Tail Twisting, Carrot Twisting** — The variation of twisting in which the twisted part of the wrapper is formed into a pointed tail (*see* Fig. 16).

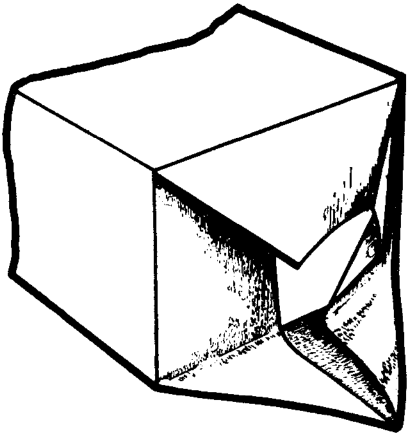


Fig. 13 Progressive Fold

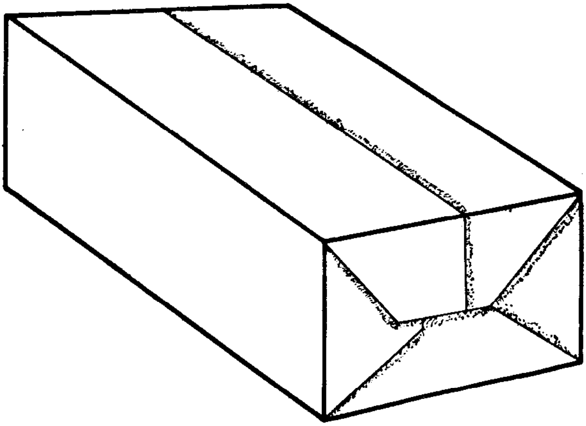


Fig. 14 Progressive End Fold

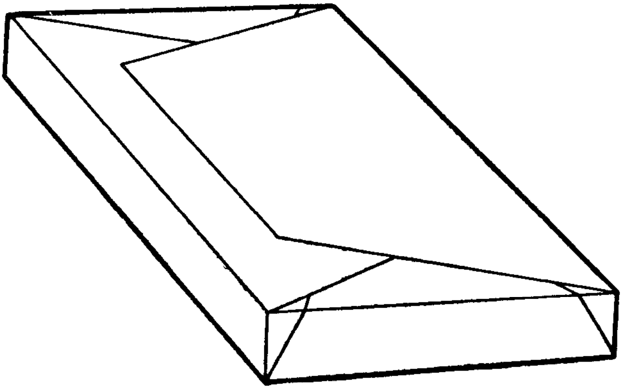


Fig. 15 Portfolio Fold
(Chocolate Bar Base Fold)

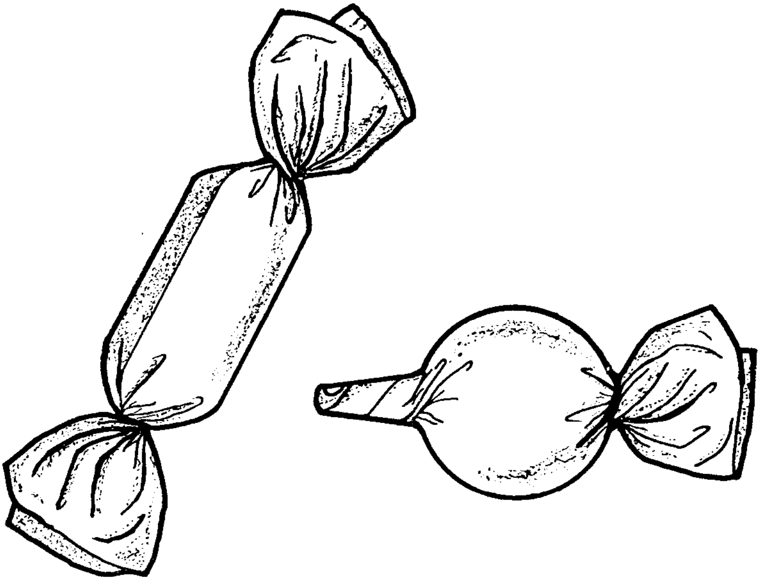


Fig. 16 Twist Wrap and Rat-Tail Wrap

**3.31 Roll Wrapping** — The wrapping (usually double wrapping) of one or more cylindrical objects, especially confectionery and pharmaceutical products (*see* Fig. 11).

**3.32 Strip Packaging** — A form of wrapping process in which small articles, especially pharmaceutical tablets, are wrapped individually or in multiples, in a continuous strip that is easily divided into convenient units for sale or use by tearing or cutting off.

**3.33 Shrink Wrapping** — A form of wrapping process in which a heat-shrinkable wrapper is applied in any convenient manner, and is afterwards subjected to heat treatment to shrink the wrapper about the article.

**3.34 Seam** — The junction between two edges of the same wrapper, when formed into a wrap.

NOTE — For particular packages, it may be necessary to qualify the terms 'seam' in relation to direction (as longitudinal seam, transverse seam), or position (as base seam, side seam, end seam, etc) or physical form.

**3.35 Single Point Folding** — A particular sequence of tucking and folding operations carried out on a wrapper previously bent into tube form, where a single flap (which may or may not be pointed) is produced. With respect to the initial tuck, the required sequence of directions from which the tucks and folds are made is: 0°, 90°, 270°, 180° (or 0°, 270°, 90°, 180°) (*see* Fig. 17).

**3.36 Single Point End Folding** — End folding using the single point sequence (*see* Fig. 18).

**3.37 Single Point Turned Under Folding** — A variation of single point end folding in which the single flap is finally turned underneath the package, rather than on to the end (*see* Fig. 19).

**3.38 Sachet Wrapping** — A method of wrapping in which the wrapper is formed into a tube around the article wrapped (usually a sweet), one end of the wrapper being folded as for envelope base folding, and the other end of the wrapper being formed into a fantail twist (*see* Fig. 20).

**3.39 Tucking** — The action of thrusting a part of a wrapper inwards with respect to the package.

**3.40 Twisting** — The action of several times rotating an end part of a wrapper which has previously been folded into tube form.

**3.41 Tear Tape** — A narrow ribbon of film or other flexible material incorporated in a wrapper (usually by mechanical means during the wrapping process) to facilitate the opening of a package. When the end of the tape is pulled, a controlled tear is made, allowing the package to be opened easily.

**3.42 Twist Wrapping** — A method of wrapping in which the wrapper is formed into a tube around the article or articles wrapped, and the ends of the wrapper are closed by twisting. When the term is unqualified, the twist meant are fantail twists (*see* Fig. 16).

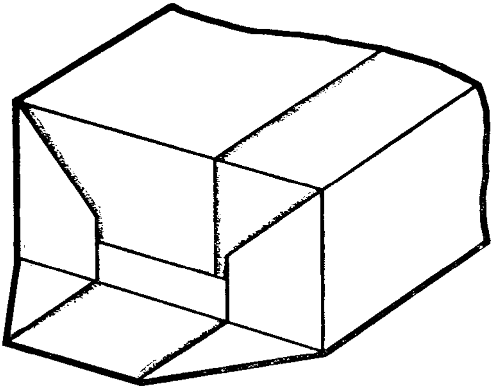


Fig. 17 Single Point Fold

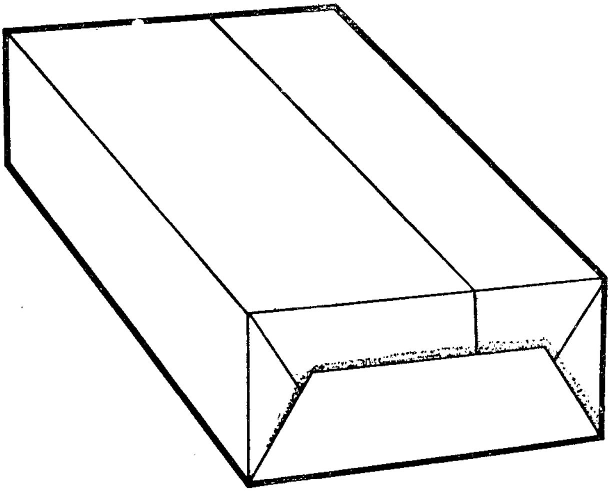


Fig. 18 Single Point End Fold

**3.43 Wrap** — The form taken up by a wrapper at the end of a wrapping process.

**3.44 Wrapper** — A sheet of flexible material used for wrapping purposes.

**3.45 Wrapping** — The process of wholly or partly covering an article, or group of articles, or a commodity with one or more sheets of flexible material.

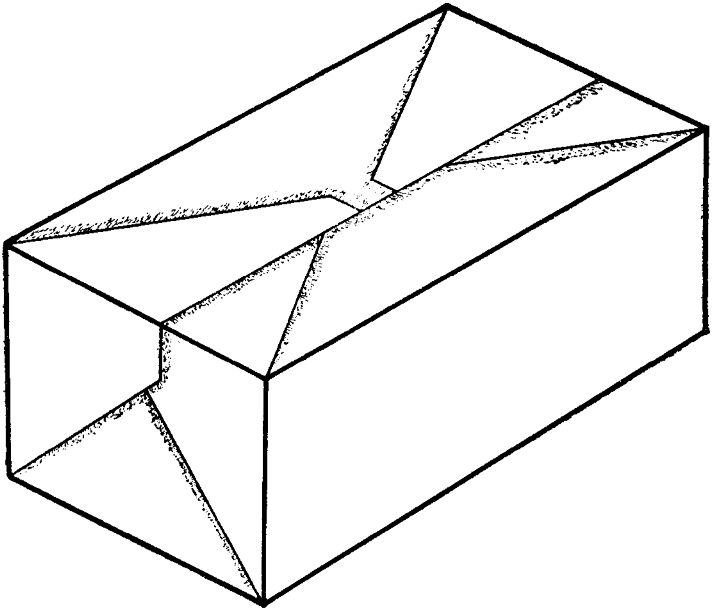


FIG. 19 SINGLE POINT TURNED UNDER FOLD

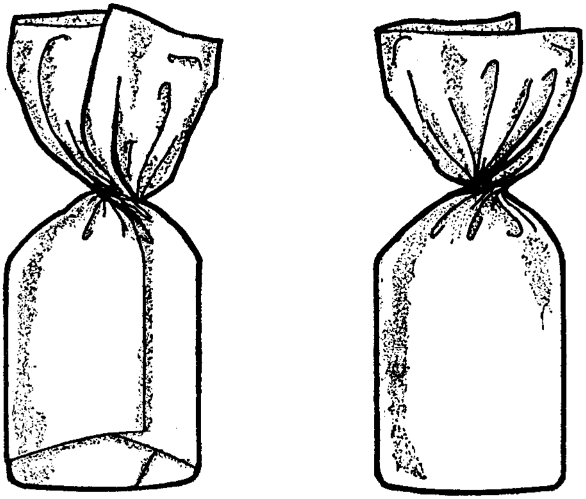


FIG. 20 SACHET WRAP

**BUREAU OF INDIAN STANDARDS**

***Headquarters*:**
Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002
Telephones: 323 0131, 323 3375, 323 9402
Fax : 91 11 3234062, 91 11 3239399, 91 11 3239382

Telegrams : Manaksanstha
(Common to all Offices)

| ***Central Laboratory*:** | Telephone |
|---|---|
| Plot No. 20/9, Site IV, Sahibabad Industrial Area, Sahibabad 201010 | 8-77 00 32 |
| ***Regional Offices:*** | |
| Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002 | 323 76 17 |
| *Eastern : 1/14 CIT Scheme VII M, V.I.P. Road, Maniktola, CALCUTTA 700054 | 337 86 62 |
| Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160022 | 60 38 43 |
| Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600113 | 235 23 15 |
| †Western : Manakalaya, E9, Behind Marol Telephone Exchange, Andheri (East), MUMBAI 400093 | 832 92 95 |
| ***Branch Offices::*** | |
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| ‡Peenya Industrial Area, 1st Stage, Bangalore-Tumkur Road, BANGALORE 560058 | 839 49 55 |
| Gangotri Complex, 5th Floor, Bhadbhada Road, T.T. Nagar, BHOPAL 462003 | 55 40 21 |
| Plot No. 62-63, Unit VI, Ganga Nagar, BHUBANESHWAR 751001 | 40 36 27 |
| Kalaikathir Buildings, 670 Avinashi Road, COIMBATORE 641037 | 21 01 41 |
| Plot No. 43, Sector 16 A, Mathura Road, FARIDABAD 121001 | 8-28 88 01 |
| Savitri Complex, 116 G.T. Road, GHAZIABAD 201001 | 8-71 19 96 |
| 53/5 Ward No.29, R.G. Barua Road, 5th By-lane, GUWAHATI 781003 | 54 11 37 |
| 5-8-56C, L.N. Gupta Marg, Nampally Station Road, HYDERABAD 500001 | 20 10 83 |
| E-52, Chitaranjan Marg, C-Scheme, JAIPUR 302001 | 37 29 25 |
| 117/418 B, Sarvodaya Nagar, KANPUR 208005 | 21 68 76 |
| Seth Bhawan, 2nd Floor, Behind Leela Cinema, Naval Kishore Road, LUCKNOW 226001 | 23 89 23 |
| NIT BUilding, Second Floor, Gokulpat Market, NAGPUR 440010 | 52 51 71 |
| Patliputra Industrial Estate, PATNA 800013 | 26 23 05 |
| Institution of Engineers (India) Building 1332 Shivaji Nagar, PUNE 411005 | 32 36 35 |
| T.C. No. 14/1421, University P. O. Palayam, THIRUVANANTHAPURAM 695034 | 6 21 17 |

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